

ABSTRACT

An antenna-coupled microbolometer multilayer structure, and associated method of forming an antenna-coupled microbolometer multilayer structure are disclosed, where the structure includes a dielectric layer of dielectric material having at least one locally doped region doped with a dopant to provide a thermal conductive path from a first side to a second side of the dielectric layer. The structure includes an antenna on the first side of the dielectric layer coupled to the locally doped region; a read-out integrated circuit (ROIC) on the second side of the dielectric layer coupled to the locally doped region; a conductive substrate between the dielectric layer and the ROIC; and an electrical connection between the locally doped region and the ROIC, wherein the ROIC is connected to detect, via the electrical connection, a change in electrical resistivity of the locally doped region due to thermal energy absorbed from the antenna.